

REMARKS

Reconsideration and allowance of the present patent application based on the foregoing amendments and following remarks are respectfully requested.

In the pending Final Office Action, the Examiner rejected claims 1 and 3-11 under 35 U.S.C. §102(e), as allegedly being anticipated by, or under 35 U.S.C. §103(a), as allegedly being unpatentable over, Ohmi '875 (U.S. Patent No. 6,719,875) or its foreign equivalent Ohmi '695 (JP 2000-40695); and rejected claim 7, under 35 U.S.C. §103(a), as allegedly being unpatentable over Shan '236 (U.S. Patent No. 6,232,236), WO 98/39500, and Ohmi '875.

By this Amendment, claims 1 and 7-10 have been amended to provide a clearer presentation of the claimed subject matter and claim 11 has been cancelled. No new matter has been added. Accordingly, claims 1 and 3-10 are currently presented for examination of which claims 1 and 7-10 are independent.

Applicants respectfully traverse the rejections, under 35 U.S.C. §102(e) and §103(a), for the following reasons:

I. Rejections of Claims 1, 3-6, & 8-9.

As indicated above, amended claim 1 is directed to a plasma processing apparatus and positively recites, *inter alia*, a disk-shaped auxiliary electrode wherein the auxiliary electrode is operably connected to the second power source, and ***the front surface of said auxiliary electrode is covered by an insulating material, and the back surface of said auxiliary electrode is not covered by the insulating material.*** Claim 1 also positively recites that the ***surface of the substrate and the front surface of auxiliary electrode are within $\pm 2\text{mm}$ of each other.***

These features are amply supported by the embodiments disclosed in the written description. By way of example, the disclosed embodiments clearly indicate that the insulator **902** is *only* formed on the front surface – and not on the back surface – of auxiliary electrode **104**. (See, e.g., Specification: FIG. 8 and related disclosures). The disclosed embodiments also provide setting the height of the surface **106** of the auxiliary electrode **104** equal to the surface of

the substrate **101** or setting the difference between the height of the front surface **106** of the auxiliary electrode **104** and the height of the surface of substrate **101** equal to or less than 2 mm. (See, e.g., Specification: page 20, third paragraph).

Applicants submit that none of the asserted references fails to teach or suggest each and every element of claim 1, including the features noted above. In particular, Applicants once again assert that Ohmi '875 does not teach providing the *insulating film on the front surface but not on the back surface of the auxiliary electrode*, as required by claim 1.

Specifically, Ohmi '875 merely states that the “material for auxiliary electrode **1503**” used was silicon carbide material and that a conductive material such as aluminum or the like having an insulating film *formed on* the conductive material’s surface could be used. (See, Ohmi '875: col. 7, lines 47-53). All this means is that the auxiliary electrode is made up of a conductive material with an insulating film on top of the conductive material – but both, the material and film *form the entire auxiliary electrode* – not a portion of the electrode. Stated differently, Ohmi '875 clearly suggests that, in forming the auxiliary electrode, both conductive material and insulating film comprise or cover the surfaces of the auxiliary electrode, so that Ohmi '875 can not possibly suggest that only one surface (*i.e.*, the front surface) of the auxiliary electrode contains the insulating film. To construe such a citation as teaching otherwise could only be based on impermissible hindsight.

Furthermore, there is nothing in Ohmi '875 that remotely teaches that the *surface of the substrate and the front surface of auxiliary electrode are within $\pm 2\text{mm}$ of each other*. The Examiner summarily asserted that the substrate has a surface positioned at a “level substantially equal to a level of the front surface of the auxiliary electrode”. (Final Office Action: page 4). Applicants submit that such an assertion lacks any basis or merit, particularly since there is nothing in Ohmi '875 that mentions such a $\pm 2\text{mm}$ restriction in the level difference between the substrate and the surface of the auxiliary electrode.

Applicants submit that none of the remaining references are capable of curing the deficiencies of Ohmi '875 noted above and fail in their own right to teach each and every limitation of claim 1. Thus, for at least these reasons, Applicants submit that claim 1 is neither

anticipated, nor rendered obvious, by Ohmi '875. As such, claim 1 is clearly patentable. And because claims 3-6 depend from claim 1, claims 3-6 are patentable at least by virtue of dependency as well as for their additional recitations.

Moreover, because independent claims 8 and 9 recite similar patentable features as claim 1, claims 8 and 9 are patentable for at least the reasons submitted regarding claim 1. Accordingly, reconsideration and the immediate withdrawal of the rejections of claims 1, 3-6, and 8-9 are respectfully requested.

II. Rejections of Claims 7 & 10.

As indicated above, amended claim 7 is directed to a plasma processing method and positively recites, *inter alia*, an auxiliary electrode having ***the front surface of said auxiliary electrode is covered by an insulating material, and the back surface of said auxiliary electrode is not covered by the insulating material.*** Claim 7 also positively recites ***supplying radio frequency signals with different predetermined phases to the first electrode and the auxiliary electrode*** to create a difference in plasma density between the front surface of the auxiliary electrode and the back surface of the auxiliary electrode. These features are amply supported by the embodiments disclosed in the written description. (See, e.g., Specification: FIG. 10 and related disclosures).

The Examiner maintained that admitted that Ohmi '875 discloses the claimed insulating film on the auxiliary electrode. (See, Office Action: page 10). As discussed above, Ohmi '875 clearly teaches forming the auxiliary electrode, so that both conductive material and insulating film comprise the surfaces of the auxiliary electrode. This necessarily means that the Ohmi '875 auxiliary electrode is covered with both the conductive material and insulating film and can not possibly suggest that only one surface (*i.e.*, the front surface) of the auxiliary electrode contains the insulating film. Therefore, Ohmi '875 fails to teach or suggest an auxiliary electrode having ***the front surface of said auxiliary electrode is covered by an insulating material, and the back surface of said auxiliary electrode is not covered by the insulating material,*** as required by claim 7.

Moreover, the Examiner admitted that Shan '236 does not disclose supplying radio frequency signals with different phases, but stated that in view of the Ohmi '500 and Ohmi '875 references, it is "inherent" that "RF signals originating from different power supplies will have at least some difference in the generated phases". (See, Office Action: page 10). Applicants strenuously disagree with the Examiner's characterization. However, in an effort to expedite the examination of the present application, claim 7 has been amended to specifically and positively recite the supply of *radio frequency signals with different predetermined phases to the first electrode and the auxiliary electrode* to create a difference in plasma density between the front surface of the auxiliary electrode and the back surface of the auxiliary electrode.

Thus, for at least these reasons, Applicants submit that claim 7 is neither anticipated, nor rendered obvious, by the asserted references. As such, claim 7 is clearly patentable. Moreover, because independent claim 10 recites similar patentable features as claim 7, claim 10 is patentable for at least the reasons submitted regarding claim 7. Accordingly, reconsideration and the immediate withdrawal of the rejections of claims 7 and 10 are respectfully requested.

III. Conclusion.

All matters having been addressed and in view of the foregoing, Applicant respectfully requests the entry of this Amendment, the Examiner's reconsideration of this application, and the immediate allowance of all pending claims.


Applicant's Representative remains ready to assist the Examiner in any way to facilitate and expedite the prosecution of this matter. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the Undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number **03-3975**.

The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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